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Professor of Physiology in the University of Bern.

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INFLAMMATION

OF THE

BREAST,

AND

MILK ABSCESS.

INFLAMMATION

OF THE

BREAST,

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MILK ABSCESS.

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PREFACE.

ANY one taking the pains to look over even a limited number of writers who have a claim to be considered as authorities on the subject of this Essay, will encounter the most contradictory opinions and advice. Certain preconceived ideas seem, in many instances, to have tinctured the description given by them of the nature of the disease, while a bias towards some extreme or other has determined their plan of treatment.

To decide whether, in the following pages, conclusions are to be found more consistent with a correct interpretation of clinical facts, and

whether the rationale of the line of practice recommended is satisfactory, the assistance of the Profession is sought.

The author wishes to acknowledge the obligations he is under to Dr. King for his assistance in the discussion of some important points; and to his colleagues, Dr. Frere and Mr. Mitchell Henry, and to Mr. Ure, of St. Mary's Hospital, for their politeness in allowing him to quote the corroborative cases to which their names will be found attached in the text.

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INFLAMMATION

OF

THE BREAST,

AND

MILK ABSCESS.

SECTION I.

THE breast forms the last physical link of that chain which connects the mother to her offspring. The series of reproductive organs, the ovaries, uterus, and mammary glands, are respectively eliminative, developing, and perfecting. The latter stand as a non-deciduous placenta to the breathing infant, in the same relation as the uterine or deciduous placenta does to the torpid fœtus, and afford the means whereby the future individual, tenderly, and by degrees, is placed in its independent relations with the external world.

The uterine placenta pours its nourishment directly into the vascular system, whereas the

breast yields a fluid, which must pass through the digestive and assimilative organs, previously to its transmission into that centric engine of vitality; thus the externally placed breast is in relation with the stomach or peripheral nutrient apparatus, the internally placed uterus with the heart or central nutrient apparatus.

The breasts appertaining to the thoracic segment of the body, equally, at least in point of time, divide the labour of nutrition of the offspring between the thoracic and pelvic segments. The vascular and nervous supply of the mamma associates it with the upper segment; that of the uterus associates it with the lower segment. Pathognomically, this relation is often demonstrated; the shoulder and arm are sympathetically affected in certain disorders of the breast, while the thigh and hip similarly suffer during the continuance of some abnormal conditions of the uterus.

The same increase of capacity takes place in the mammary vessels during lactation, as occurs in the uterine during gestation. Although the breasts increase towards the close of gestation, the concentrated energy of the organism is not directed to them till after parturition.

At this critical period, there would appear to be, as it were, a metastasis of energy.

It is therefore a question highly deserving attention, how far the abdication of suckling may, by its interfering with this translation of activity, impede the return of the uterus to its normal size, and originate some more serious disorder.

Dr. Tyler Smith has said: — "Doubtless, Nature intended that in the larger genesial cycle, the ovaria, uterus, and mammæ, should have their alternate periods of repose. This intended rest to the uterus and ovaria after the formidable efforts of gestation and parturition is entirely frustrated by hired nurses; the result is seen in an increased predisposition to uterine and ovarian disease."*

The determination of blood to an organ cotemporaneous with its increased productive energy is the manifestation only of a secret mandate of the nervous centre. The activity of the breast is a phenomenon dependent upon antecedent changes in the uterus and ovaria. The ovaria, uterus and mammæ form, as it were, a reproductive pile, the circuit being completed by the nervous system. If there be no antece-

* "Parturition and the Principles and Practice of Obstetrics," Lecture xii., p. 187. The reader can with great advantage be referred to the whole of this highly interesting lecture.

dent ovarian excitement, no impulse is transmitted to the breast. As in the galvanic battery, if no chemical action takes place at one pole, no electric current traverses the wire and no sign is elicited at the other.

The mammary gland essentially resembling in its structure other conglomerate glands, as the pancreas and salivary glands, is subject to greater periods of repose and activity than these, and to more intense degrees of excitement. The arc of its oscillations of vascular condition is infinitely larger, and in this circumstance may probably reside the explanation of its greater liability to disease.

Deficiency or excess of nutrition, atrophy and hypertrophy—errors of growth, cerocystic-disease, and fibrous tumors — disorganization, (from its becoming the seat of the manifestation of a cancerous diathesis), malignant affections, compose a serious category, to which is to be added inflammation of the organ, more ephemeral in its nature, but the most frequent in its occurrence.

Inflammation attacks the breast with varying degrees of intensity, and when resolution is not obtained, may produce abscess, the formation of sinuses, lacteal fistula, retraction of the

nipple, more or less sloughing of the integument, as well as of the glandular structure, chronic induration, and chronic abscess.

The disorder may involve the whole gland, or limit itself to one or more of its segments.

Acute inflammation commences with shiverings, headache, pain in the back, and other signs of febrile disturbance of the general system.* The pain in the breast is described as of the most agonizing nature, entirely preventing sleep; it shoots through the side to the shoulder, and down the arm. The continuous suffering soon produces exhaustion; the eyelids droop, the skin becomes soft, relaxed, and moist with constant perspiration; the tongue covered with a whitish yellow coating; the lips are dry, and appear as though stained with orange-juice; thirst is intense. The skin over the inflamed part has, at the beginning, only a slight blush; it afterwards becomes tense and shining, and exquisitely sensitive, and passes through various shades, from the ordinary scarlet of inflammation, to brownish red, and purplish leaden tints, the latter indicating the existence of matter below.

* This fever has been called *weed*, and is said to last from 24 to 48 hours.

The respiratory movements are often exceedingly hurried, and resemble those of a patient suffering from certain internal diseases.

In *Subacute inflammation*, the symptoms of pyrexia are absent; the appearance of an indurated lump in the breast, not always accompanied with pain, first directs attention to the part; the enlargement and hardening may be very gradual; by degrees the pain becomes more obtrusive, and the local symptoms more acute, until they arrive at a pitch equalling those of the severer form just mentioned.

In cases where the patient is suckling, the constitutional symptoms generally indicate great debility; the skin is moist, semi-transparent, and pliable; the tongue broad and pale; the muscles of the face quiver; the sclerotic is opalescent, in colour and appearance resembling the white of a boiled plover's egg.

There is not that tendency to point rapidly which is found in the acute form, and occasionally there results what is called chronic abscess, a consequence of subacute mammary inflammation, which has been specially noticed on account of its having been frequently mistaken for a more serious disease.

The question whether the inflammatory pro-

cess locates itself upon the actual secretory portion of the gland, or in the fibrous and areolar trabecular tissues, has often been suggested. Mr. Greenhalgh, by repeated microscopic examinations, has detected that in the milk drawn at the earliest stage of inflammation, that of engorgement, a large proportion of the "corps granuleux," which Donné has described as belonging to the colostrum—bodies holding an intermediate state between exudation and secretion. A specimen was tested by Dr. T. H. Tanner, and was found to be deficient in casein, so that it would appear that the excited state of the vascular apparatus prevented the due elimination of its own peculiar product by the breast. Where secretional congestion brings on the inflammation, one would anticipate the first evidences of disorder in the secretory membrane; but there can be no doubt that in certain other instances the affection of the secretory tissues is secondary.

Inflammation of the breast most commonly occurs as a concomitant of child-bearing, but does not exclusively belong to the lying-in period. The unmarried female is sometimes the subject of it, as also the pregnant one.

The disorder is more prone to attack certain

periods of lactation than others, which circumstance the following table will in some measure serve to illustrate:—

Number of Case.	Age of Patient.	Duration of Lactation in weeks.	Number of Confinement.
I.	...	4	...
II.	...	5	...
III.	...	6	...
IV.	...	8	...
V.	27	6	4
VI.	23	56	...
VII.	28	55	...
VIII.	30	52	4
IX.	38	12	...
X.	22	6	1
XI.	25	32	2
XII.	23	1	1
XIII.	24	1	1
XIV.	20	2	1
XV.	20	6	1
XVI.	37	68	6
XVII.	26	3	1
XVIII.	26	6	4
XIX.	...	10	1
XX.	24	60	2
XXI.	29	7	7
XXII.	39	72	10
XXIII.	30	2	3
XXIV.	27	24	4
XXV.	22	4	1
XXVI.	30	11	4
XXVII.	22	8	2
XXVIII.	28	3	2
XXIX.	...	8	...
XXX.	34	1	8
XXXI.	22	1	1
XXXII.	23	4	1
XXXIII.	22	60	1
XXXIV.	41	64	11
XXXV.	32	36	8
XXXVI.	23	24	1
XXXVII.	23	2	1

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Number of Case.	Age of Patient.	
XXXVIII.	25	4 months pregnant.
XXXIX.	41	6 months pregnant.
XL.	21	6 months pregnant.
XLI.	17	unmarried, — catamenia more or less irregular in all.
XLII.	16	
XLIII.	17	
XLIV.	...	

On casting the eye down the column which indicates the duration of lactation, it will be observed that the periods of attack all at once leap from before the eighth week, or thereabouts, to beyond the fiftieth.

If the cases be arranged in groups, according to the distance in months from the date of delivery, it will be found, that of the first 37 cases twelve occurred during the first month, ten during the second, three during the third, eight beyond the eleventh month, leaving only four cases to spread over the intermediate months.

In the 'Medical Gazette,' vol. xiv., p. 535. Mr. R. R. Robinson has reported six cases of inflammation of the breast, which were under his care in the London Dispensary. Out of these, 1 occurred in a woman who had been suckling twelve months, in 2 the duration of lactation is not given; in the others, 1 occurred at four months and 1 at three weeks—and 1 in an unmarried person.

Illustrative Notes.

CASE A. ——, æt. 41; mother of eleven children; has a broken breast on the right side; there is a small opening just internal to the nipple; not much hardening; she has been suckling *fifteen months;* this breast she has not employed since her fifth child was twelve months old, in conseqence of the nipple having been bitten through by it in a fit of passion at finding no milk; the breast began to inflame and grow hard and lumpy six weeks ago.

CASE B. ——, æt. 22; has been suckling her first child *fourteen months;* two days since was attacked with shivering and feverishness; her left breast is swollen and painful along the outer border; there is great pain and tenderness in the axilla and shoulder.

CASE C. ——, æt. 28; till within a week was suckling her child, *thirteen* months old, when it died; the breast, two days since, became swollen, red, and painful, but she has no febrile symptoms of any gravity.

CASE D. ——, æt. 23; has swelling of the inner margin of the right breast; she has suckled during *thirteen* months; general symptoms indicate exhaustion.

CASE E. ——, æt. 30; has the left breast in-

flamed and swelled to twice the natural size; she is suckling her fourth child, *now twelve months old.* She is extremely weak; the attack came on a week since, with shivering and fever.

CASE F. ——, æt. 24; out-patient of the Middlesex Hospital, under the care of Mr. Mitchell Henry; has a hard circumscribed lump, about the size of a large walnut, on the outer side of the right mamma; she has been suckling during the past *fifteen months;* the pain came on gradually; she states that of late the breasts have become *large and doughy.* Two years ago the same breast suppurated in several places.

CASE G. ——, æt. 35; had inflamed breast seventeen years since; she is now *four months pregnant;* the present attack came on seven days since, with shooting pain, shivering, and thirst; she has not slept.

CASE H. ——, æt. 21; is now *pregnant six months;* has inflammation of the left breast; the whole organ is much swelled; commenced five days since, with a burning and itching, accompanied by a gnawing pain; last night she had a strong shivering fit, which lasted two hours. She had a child twelve months ago, which she did not suckle on account of retraction of the nipple, but then had no trouble with her breast.

SECTION II.

THE causes of inflammation in the breast may be arranged as follows:—

I. Secretional congestion.
II. Irritation of sore nipples.
III. Mechanical irritation.
IV. Exposure to cold.
V. The condition of the tissues remaining after a previous attack.
VI. Irritation from a vitiated state of its secretion.
VII. Irritation from the increased arterial supply involved in lactation.
VIII. Over-lactation.

While investigating the causes of inflammation in a glandular organ, we must recognise the conditions arising from its peculiar structure. The mechanical irritation of a foreign body will inflame a vascular texture, as for instance, the conjunctiva. A poisoned state of the blood will give rise to intense inflammation in some por-

tion of the body, the integument, as for example, in erysipelas. Injury to the nerves of a part will in certain cases produce the same effect; anæsthesia of the fifth nerve is liable to be followed by destruction of the eye-ball. In a gland we have esoteric influences at work. A gland is liable to have its microcosm deranged, as Mr. Simon has described,* from the accumulation of its own secretions, and thus have originated within, a source of irritation which may easily become the cause of the spoiling of the organ. While a gland thus is rendered liable to disorder from its peculiar endowment, it enjoys no immunity from dangers to which the other highly vascular tissues are exposed.

I. *a.* Secretional congestion may occur from delay in putting the infant to the breast, frequently intentional on the part of the nurse, in accordance with an erroneous notion of the propriety of interfering with Nature's dictates.

Usually the milk is not secreted until the gland is stimulated by the manipulations of the child, and thus the mother escapes the mishap to which prejudice would render her liable; but when, on the contrary, the breast is full of

* Transactions of the Medico-Chirurgical Society, Vol. xxx.—*On Subacute Inflammation of the Kidney.*

milk at the time of parturition or immediately after, the danger spoken of is encountered.

b. As in a somewhat similar manner, when the nipples are excoriated, the agony that is given by the application of the child induces the mother to shrink from suckling at the time when her sensations would naturally cause her to do so.

c. A malformation of the lactiferous tubes would seem in certain instances, by offering obstruction to the passage of the secretion, to be a cause of engorgement of the gland.

CASE I.—July 16th, 1852. ——, æt. 23; has been confined one month with her first child; there is a pear-shaped swelling, with the apex towards the nipple, in the inner side of the right breast; it is hard and somewhat red; perceived pain in the spot three days after delivery. This is most probably an enlargement of a single lobe from obstruction of its main outlet.

d. A sudden and rapid secretion of milk occasionally takes place, which the efforts of the infant may not suffice to relieve the breast of, and thus the milk-duct may become injuriously distended.

II. It is generally accepted that the irritation of the nipple may propagate itself along the milk tubes, and excite inflammation in them and the

tissues adjacent. It is quite possible in certain inflammatory conditions of the mucous membrane of the infant's mouth, a morbid poison may be generated, which would produce a corresponding state of the lining of the ducts. Whether sore nipples are connected with inflammation of the glandular structure in this wise, or by their tenderness deterring the mother from suckling, it is not easy to ascertain.

CASE J. ——, æt. 28; out-patient of the Middlesex Hospital, under the care of Mr. Mitchell Henry; has her right breast broken near the nipple; has been confined ten weeks with her second child; the breast began to inflame when the child was three weeks old; the nipple is accustomed to get very irritable and tender after the child has been applied a short time.

III. Mechanical irritation by too active movement of the arms, or by the violence of the infant, is a common cause of inflammation, and under this head must be included the practice of friction of the breast, with some nostrum or other of the nurse (most frequently brandy and oil).

It appears to be a very common practice, when the breast becomes tumid and painful from accumulation of milk or slight congestion, to submit it to a severe rubbing with the above-named combination.

It is not impossible that gentle friction may assist the propulsion of milk through its natural channels; but it commonly happens that severe inflammation is brought about by the injudicious and inappropriate recourse to this favourite measure. The following exceptional case, I think, worth quoting:—

Case K. —— is now 39 years old; first began to bear children eight years ago; three weeks after her first confinement both breasts suppurated; she applied nothing but poultices; they remained in a bad state for a long time. Having sore nipples, she did not put the child to the breast so often as she ought to have done; at the same time, although, only a fortnight after her confinement, actively employed herself as laundress, necessarily thereby exposed to damp and cold. The *nipple of left breast afterwards became retracted*, and since that time she has never been able to suckle with it. For five days after each delivery, she usually experiences the draught in that side, and milk is secreted; but this she "*disperses*" by gently rubbing the breast with lard. She has had five children; has aborted twice, and complains of feeble health since her marriage. In answer to inquiries she stated—if the hand be carried from the border towards

the nipple, that the milk passes out; but that by circular rubbing, its secretion is arrested.

It suggests itself that possibly by the latter mode of manipulation, the secretion is forced back into the follicles from whence it came, and being there in relation with a more finely meshed capillary plexus than it would find in the larger lactiferous sinuses, it meets with conditions highly favourable to its reabsorption.

IV.—One attack of inflammation often appears to have paved the way for subsequent ones, particularly when abscess has occurred. Probably some portions of the gland get isolated, or have the ducts by which they are connected with the nipple, destroyed or otherwise obliterated, and thus they become centres of irritation; or the perfectly normal state of tissue being not re-obtained, the increased determination of blood to the part cannot be withstood. The proneness that tissues exhibit, which have once been the seat of inflammation, under any fresh provocation, again to become affected, is a matter of common observation.

V.—Inflammation has been known to follow exposure of the breast to cold, as well as to accompany that state which ordinarily results from the effects of change of clothing or tem-

perature, wet feet, and the like. When the constitution is delicate, the breast participating in its sensitiveness, is apt to have the equilibrium of its circulation disturbed by such influences.

VI.—Inflammation of the breast, and severe indisposition of the infant, are often coincident. It appears possible that both may primarily result from an altered and vitiated state of the milk. The quality of the milk may be affected in a variety of ways; shocks of the nervous system have a powerful influence over the secretion; intense anger can render the milk poisonous to the child; an instance lately fell under my own notice, where sudden fright was the cause of complete arrest of the secretion during five days.

In other organs, the kidney and urinary passages, for example, certain changes in the quality of the secretion give rise to irritation of these parts; and, therefore, one may fairly assume that the like would hold good in respect of the breast and its secretion, and thus explain the circumstances alluded to.

VII.—The alteration of arterial supply involved in the change from a state of inaction to one of vigorous secretion, appears to be occasionally borne with impatience, the organ being idio-

pathically inflammable. The disease in these cases is allied to ovaritis, for even in the non-lactating mamma the periodic irritability may run on to inflammation, and terminate in abscess, though rarely, or it may produce chronic induration, or mammary tumor.

VIII.—Overlactation, or too long continued suckling, although by no means the least important, is dealt with last, on account of its being rather a predisposing, than a proximate cause of inflammation of the breast. Out of the list of thirty-seven cases given at page 8, eight occurred after the fiftieth week of suckling, or nearly 22 per cent. Inflammation occurring at this period, cannot be considered as a natural accident of lactation.

Thus we see, by unduly prolonging the time of suckling, while a depressed and irritable condition of the system is induced, the breast becomes again liable to inflammatory attacks. The disease-resisting force of the body, that is to say its healthiness, being reduced so much below par, it is difficult to say what slight amount of irritation might not prove adequate to excite an attack of inflammation. It is also possible that a debility, of a peculiar nature, may be produced by the continued drain of one parti-

cular secretion, just as we see certain other unhealthy conditions produce peculiar diseases of different kinds. Besides this, the organ becomes the seat of changes which presently will be more particularly dealt with.

It becomes a question what is to be considered oversuckling. Dr. Tyler Smith says:— "Probably the physiological times of lactation are also multiples of the catamenial period equalling the duration of pregnancy."*

The irruption of the teeth in the infant seems to be the natural stop put to the period of suckling. The infant, as soon as it has opposing teeth, becomes dangerous to the mother. In a moment of anger, as when it is disappointed in the supply of milk, it is very apt to bite the nipple, and thus produce grievous suffering, not only at the moment, but also in subsequent lactations. See case A., p. 10.

The duration of suckling varies in different classes, and in different countries; but taking the appearance of teeth as the truest guide, in all but exceptional cases, from eight to nine months would appear to be indicated.

To wring from the breast a supply of a fluid so nearly allied to blood in its chemical consti-

* P. 185, op. cit.

tution, beyond this period, proves at any rate injurious to the infant and to the mother. The yielding of milk, a function exercising a salutary influence on the mother, throwing into gentle curves the line which would indicate the demands upon her vital powers, instead of leaving it angular, and interrupted by abrupt breaks, converts the breast, after a certain period, into a poisoned fountain for the child, and a centre of mischief to the mother; mischief, the extent of which may not be easily calculated.

A state of prostration equivalent to that brought on by overlactation in point of time, may be induced by excessive lactation in point of quantity, as, for instance, by a mother attempting to suckle twins ; or, what is much more common in the lower classes, her own child along with that of another. A wet-nurse who has thus the care of two children cannot be too jealously watched, and should never be allowed to have the second child more than two months. It is to be remembered, that however selfish it may seem on the part of the mother who has unfortunately to deny her offspring her own milk, to change the nurse, that not only the temporary good health of three individuals is at stake, but that by neglect of this point may be

involved the loss of a vigorous constitution to two out of the three.

A woman who overtaxes her system in this way, presents a peculiar shrunken appearance. Her skin has an opacity, or rather chalkiness; it loses its natural elasticity. There is inaptitude to bodily or mental effort. The task of weaning seems to her to be one of insurmountable difficulty. A great tendency to sleep annoys her. The breast notably enlarges, loses its fat, and becomes doughy and pendulous. This enlargement deserves particular notice. It does not appear to be due to increase of volume of the actual gland-substance, otherwise the solidity of the organ would remain. The absorption of the fat is evidenced by the ease with which the different lobules may be distinguished by the touch, while the skin over them can be easily moved backwards and forwards in wrinkles.

The two accompanying outlines will give some notion of the change in shape and size of the breast.

Figure 1 shows the form of the breast when gorged with milk at an early period of suckling.

In figure 2 the nipple and reservoirs are sunken, while the lobes are enlarged and lumpy. This enlargement I imagine to be due to atonic

œdema of the fibrous and areolar constituents of the organ.

Fig. 1.



Fig. 2.



Amongst the causes of œdema, extreme debility and a watery condition of the blood is to be reckoned, a faulty state of nutrition of the capillary walls perhaps accompanying, and likewise congestion of the vessels apart from inflammation. As a familiar example, swelling of the eyelids from weeping, especially in persons of "relaxed fibre." The rush of blood to the lachrymal gland and neighbouring associated parts is analogous to the determination of blood to the breast while suckling.

My belief that this is the true explanation of the enlargement is supported by the two

considerations—namely, if it were hypertrophy of the breast the secreting power ought to be increased, which is not found to be the case. If it were due to an increase of fat, the skin could not so easily be moved over the knotted lobules, while at the same time absorption of fat has been going on at all other points of the body.

Is it not to the vitality of the organ having become reduced by its permeation with an adynamic fluid that its proneness to become inflamed, apparently from no greater source of irritation, or rather excitement, than the "determination of blood" necessary for secretion, is to be attributed?

What is the abnormal condition, giving all the circumstances just weight? What else is it more likely to be than infiltration with the watery portion of the blood?

The general system likewise suffers. The bowels become torpid, and the stomach miserably dyspeptic. The appetite disappears. The sluggishness of intellect which accompanies overlactation renders the nurse unfit for bestowing that assiduous care upon the suckling which it so much requires. More strikingly serious disorders occasionally manifest themselves, as neur-

algic and paralytic, and often anomalous affections of various parts.

The increase in size adds so much to the weight of the breast, that a great strain is cast upon those tissues which serve to maintain it in its natural position; and whether inflammation attack the breast or not, this change has the serious inconvenience of leaving it inordinately lax and pendulous after weaning.

I have appended the following short notes of cases illustrative of the effects of overlactation on the system:—

Case L.—M. A., æt. 32, mother of several children, applied to me with paralysis of the portio dura of the left side, which made its appearance about two months after her confinement. Her countenance bespoke extreme exhaustion, and she presented other symptoms of debility; her husband being out of employment, she, as a means of obtaining a better diet, had taken a second child to wet-nurse, being already too depressed sufficiently to nourish one. It is worth mentioning that, in this case, chalybeate tonics did not give the expected result. The tris-nitrate of bismuth, in doses of three grains, three times a day, appeared to have the sort of influence

that might have been expected from iron; by occasionally discontinuing the medicine, and watching the effect, satisfactory evidence of its beneficial influence was obtained; the patient gradually recovered.

CASE M.—Nov. 30, 1849. ——, æt. 30; has neuralgic pains recurring every hour and half over the distribution of portio dura; but I have no further notes than that she was over-suckling.

Dr. Robert Frere informs me that he has met, amongst his patients at the Middlesex Hospital, with two allied cases.

One in a woman who, after a tedious labour with her first child, had continuous neuralgia over the distribution of the fifth nerve to the face; she had been suckling one month.

Another in a scrofulous woman, who suckled her first child ten months; both cases yielded to porter and steel.

CASE N. ——, æt. 34; has intense pain in the right ovarian region; she is in the extremest state of debility and nervous excitability; she is now suckling her fourth child, eighteen months old, and which has cut six teeth; the breasts are large, opaque, flabby, and pendulous; there is great inclination to sleep.

CASE O.—A middle-aged woman, who had been on a previous occasion a patient of the Western Dispensary with chronic periostitis of the ulna, not of a syphilitic nature, applied with angry flat vesicles and pustules of various sizes, situated along the back of the arm, some as large even as a crown-piece, while others might be covered by a pea. The skin on which these were seated, was thickened by about the eighth of an inch. The line of demarcation, between the inflamed and non-inflamed portions of the integument was so distinctly marked, instead of gradually shading off, that the vesicles and pustules were raised upon a table of inflamed skin. This very unusual appearance led to the suspicion that there was something specific about the case.

The patient having had a recurrence of the pain in the ulna, had applied a blister a week before, as she had repeatedly done on previous occasions. However, it appeared that she was now suckling her child, which was twelve months old. She was ordered to discontinue suckling, and take some tonic medicine, and very speedily got well.

CASE P. ——, æt. 38; has extensive psoriasis; has suckled fourteen months; two years ago the eruption developed itself under like circumstances.

Case Q.; somewhat similar, occurred in a young woman æt. 29. She had very severe psoriasis over the whole of one leg; this proved equally obdurate under every variety of treatment. One day she was accompanied by her child, nearly two years old, whose unhealthy puffy appearance, led to the discovery of its being still retained at the breast. By causing her to wean immediately the psoriasis disappeared.

Dr. Conolly, incidentally mentioning a case of mania from over-suckling, stated that the irritation produced by the manacles was excessive, and that two of the toes mortified.*

Case R. ——, middle-aged woman; mother of several children; has an abscess forming in the posterior inferior triangle of the neck; she is exceedingly depressed; the tongue is covered with a yellowish fur; complains of intense pain, which prevents her sleeping. She has been suckling thirteen months.

Case S. ——, æt. 28; has long irregular ulceration on the side of the neck, which exposes the middle part of the chain of cervical lymphatic glands; she is very pale and weak; is suckling

* Lecture at the Royal Institution, May 12, 1852.

her second child eight months old; she suckled her first child, now four years of age, during two years; and whilst doing so, first experienced the inflammation of the glands, now uncovered. I have before seen one, at least, almost parallel case.

SECTION III.

In dealing with the treatment of inflammation of the breast, we must consider, first, those measures which have the object of bringing about resolution, and secondly, the steps to be adopted when that termination of inflammation is not obtained, according as the result may be, whether it be simple abscess, or abscess complicated with sloughing, or followed by formation of sinuses or lacteal fistula, or chronic induration.

The treatment must be general as well as local, and must be respective of the circumstances of the case, whether the functional action of the breast has been deranged by causes proper to the organ, or whether an abnormal state of the general system has rendered the functional activity incompatible with its vascular equilibrium, or whether it belongs to neither of these classes, but is idiopathic. In forming a prognosis, we have to take into account the locality of the inflamed spot, whether it be in the secreting por-

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tion, or in the neighbourhood of the larger milk ducts. We may for this purpose map out the breast into two regions, by drawing a circle round the nipple, having a radius of about one inch and a half. The central being the region of the larger milk ducts and reservoirs, the peripheral being that of the lobules; according as the swelling be in either of these localities, we judge of its belonging to either the secreting or duct portion of the gland.

From what has been already shown at page 9, the attacks may be classed into those of the first period and of the second period. In the attacks of the first period, the cause is generally one proper to the gland. In the attacks of the second, the cause lies directly or indirectly in the depressed condition of the system, and, as before stated, excessive lactation can hardly be measured by time, for where the physical energies of the mother are deficient, a state of debility equivalent to that produced by suckling continued beyond the limit Nature has assigned, is easily brought about in one who would be otherwise a healthy woman. While certain exceptional cases are met with during pregnancy, or accompanying some disorder of the menstrual function.

In the treatment at the onset, in cases of

the first period, perfect rest, in the almost recumbent position, is strictly to be observed. By enforcing this position, the gland is prevented from dragging upon its suspensory structures, of which the vessels themselves form no inconsiderable part; and the lower part of the gland has then not to bear the weight of the whole, so that irritation from such sources is obviated; when circumstances prevent this being carried out, the breast should be slung in a convenient bandage or shawl. The diet must be as scanty as possible and must have liquids excluded from it. Free purgation by salines and those other laxatives which produce copious watery stools; a mixture of sulphate and carbonate of magnesia in sufficiently large doses to give an effect quickly to commence with, and continued in smaller doses twice a day, so as to maintain a relaxed state of the bowels, are to be given. The purgative acts beneficially most probably both by freeing the system of a considerable quantity of watery matter, and by establishing a counter determination of the blood. By diminishing the secretion of milk we prevent fuel being added to the fire, since secretional congestion is so frequently a cause of mischief. The thirst which is so troublesome and impor-

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tunate in this stage may be allayed with the ordinary effervescing saline draught, with a few drops of the spiritus ætheris nitrici to promote cutaneous action.

Dr. King, who, as an accoucheur, is brought into early contact with these cases, informs me that he enforces the strictest confinement to the prone position and rest of the upper extremities that is possible, and this he considers, combined with free purgation with a mixture of Epsom salts and carbonate of magnesia, will, in the vast majority of cases, ward off the severer stages of the disorder.

In respect of the propriety of putting the child to the affected breast, no invariable rule can be laid down; the degree to which the breast is distended with milk, the seat and extent of the inflammatory action, must guide in this matter. If there is excessive abundance of milk, there is a great probability that the advantage to be gained by relieving the breast of its load will more than counterbalance the vascular afflux towards it; but the application of the child to the nipple without such inducement is most decidedly injudicious.

Covering the breast with cold evaporating lotions is often serviceable in this the first

stage. By keeping the gland cool secretion is checked, and an opportunity is given for the excited vessels to resume their normal calibre and condition. Lead lotion and spirits of wine, or solution of the hydrochlorate of ammonia, have great reputation as *discutients;* but I imagine their action as such is limited to the direction mentioned.

Mr. Tuson, whose account of inflammation of the mamma* is, as far as I am able to judge, the most complete, agrees with the older writers in attributing a peculiar solvent property to the hydrochlorate of ammonia lotion.

Dr. James Arnott strongly recommends the application of a degree of cold as low as that produced by the mixture of powdered ice and salt.

But it is possible that the cold applications may serve only to aggravate the pain, and that hot fomentation only will afford relief. Mr. Earle advised that the breast should be enveloped in cloths wrung out of hot water, and then covered with an ordinary wooden bowl. A more convenient apparatus is now made from the material called spongio-piline. It would appear that the heat and moisture, by diminishing the tension, render the pain less, and thus may, perhaps, besides, ease off the congestion. Nevertheless, many

* Tuson on the Female Breast. 1846.

instances have fallen under my notice where the infiltration of the tissues has been favoured by a too long continuance of these means, and in which a copious and exhausting discharge has been thereby induced.

What has been said of hot fomentations applies equally well to the use of the poultice—moisture and heat are common to both ; but the poultice has the property of most minutely moulding itself to the surface of the part, thereby of more equally distributing the weight. Sometimes when the skin is inflamed, its nervous sensibility is exalted to such an extreme pitch, that what might appear to be a most insignificant alteration in the application, proves one of importance, at least as far as the comfort of the patient is concerned.

Want of rest, caused by the intense pain, aggravates the distress and depression of the vital powers. It is almost invariably beneficial to obviate this by the administration of some anodyne. Ten or twelve grains of Dover's powder, or an equivalent dose of some solution of opium, should be employed, and the addition of opium to the fomentation or poultice made. Leeches are admissible only in few instances ; we generally observe that the more debilitated the system, from

whatever cause—too frequently among the patients of a public institution from a deficient supply of food and unhealthy homes—the more extensive and permanent is the injury done by the disorder, the greater the extent of sloughing, the more numerous the abscesses, and the more tedious the convalescence. However, when the inflammation is confined to the region around the nipple, and it appears to have no disposition to extend, ten or twelve leeches may be applied, and their bites encouraged to bleed freely, especially if the attack seem to have originated in a temporary blocking up or irritation of one or more of the larger ducts. If one is fortunate enough to succeed in relieving the local irritation, it gives time for the re-absorption of the milk, and the mischief may be warded off.

It is generally in the first stage of the attack that the nurse adopts the favourite measure, infriction with brandy and oil, alluded to at page 15, and, as we shall see by Case T., not always with the best result. I have observed, however, that certain stimulating external applications laid over the surface, but *not rubbed in*, often prove efficient in hastening resolution ; of these may be mentioned the ceratum resinæ, and the unguentum hydrargyri fortius. The latter, we know, has a powerful influence in promoting absorption of

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effused lymph, but it might be objected to lest it should affect the system. The risk of this is very small, and quite insignificant when compared with its beneficial action. See cases T, U, and V.

CASE T. ——, æt. 27; one month after her confinement with her fourth child, applied with the right breast indurated and painful below on the outside; she never suckled with the breast, because the left was the "handier;" the congestion was very speedily removed by purgatives, and the application of ungt. hydrargyri F.

Five months subsequent to this, March 26th, 1851, she applied again with inflammation about the same spot, which had been coming on for a fortnight, and which she had attempted to cure by frictions with brandy and oil. "She appears to have done harm thereby, as suppuration seems on the point of taking place. Her husband being out of work, she has less food than usual, and is besides in an exceedingly weak and nervous state. To take quinine with decoction of bark, and apply the mercurial ointment sparingly over the inflamed part."

March the 30th. An abscess has formed, but the patient refuses to have it punctured. After the discharge of the pus by a spontaneous opening,

the breast was strapped, and the patient discharged well on April the 27th.

CASE U.—M. R., æt. 39; has swelling at the lower half of the right breast, which is exquisitely painful; there is but slight redness of the surface; she has been suffering for more than a fortnight; she is not suckling; her countenance is much shrunken; pulse rapid and feeble; tongue brown and dry from exhaustion; she is quite unable to sit up in bed. She has been applying hot fomentations, and has been taking decoction of bark and nitric acid three times a day, with conium pill at night. No relief has been given her by these measures.

I ordered the fomentation to be discontinued, and mercurial ointment, with opium* to be applied. Ammonia and the decoction of cinchona to be taken, and the conium pill to be repeated.

The relief afforded by the application of the ointment was almost immediate. The system rapidly recovered itself, and within ten days the patient was completely restored.

Suppuration sometimes rapidly comes on in the breast, in spite of all the means at command

* ℞ Pulv. Opii. ʒi.
Ungt. Hydrargyri Fort. ʒi.
Ft. unguentum.

to prevent its occurrence; more generally, though, from neglect or mismanagement at the earliest stage of the disorder.

Abscess of the breast may prove very simple, and terminate rapidly in complete cure, or it may be the cause of infinite trouble. In the former case, the induration remains circumscribed, speedily points, and immediately the exit of the pus is procured gets well; in the latter, one lobe after the other suppurates, and the breast becomes riddled with the openings of the abscesses, the discharge from which is very great, and which continues for a long period, to the exceeding misery of the patient.

The haste with which one may open any abscess, must be regulated in a great measure by the neighbourhood in which it happens to be; and the same may be said of making an incision in an inflamed part, where there is every probability of there being matter already formed, or the almost certainty that, sooner or later, there will be suppuration.

In a case of diffused inflammation of the back of the arm, it would matter very little whether blood or pus followed the bistoury. But with the breast, the part concerning which a woman with so intense an instinctiveness is

solicitous, the case is different; it is advisable before using a knife to be quite certain of the existence of matter.

The simple state of the case is this. If the incision is made too early, the bistoury may have to divide some portion of comparatively healthy gland and skin, and the opening will require to be preserved as such by the insertion of some kind of tent, to say nothing of the undesirableness of dividing a secreting structure, and the probable establishment of a mammary fistula: whereas if the incision be too long delayed, especially in cases where there is much depression of the system, a large patch of skin may ulcerate, and leave an exceedingly ugly gaping wound—the sight of which terrifies the patient, and affords little satisfaction to the surgeon—and which involves a scar of corresponding size.



I believe the best plan is to wait until the superjacent structures are infiltrated with lymph, so that incision does not heal within a few hours of its being made; but not beyond that time—that is to say, to the time when the process of absorption of the tissue has commenced.

Whether one shall have remaining, after the termination of the disorder, a clear linear cicatrix, or a broad irregular one, is a matter which a delay of even six hours in the time of incision may affect. This view of the question of making an incision has been supported by the testimony of one of the most experienced surgeons.

Mr. Syme says:—"The cavity of the abscess generally heals sooner when evacuation is not hastened by using the knife before the suppuration is completed, and the thin superjacent integuments project or point."*

CASE V.—March 26, 1852. ——, æt. 26; confined one month; has the whole of both breasts inflamed and much swollen; suppuration has taken place, and the matter is pointing above and to the inner side in the right, above and to the outer side in the left breast. The disorder commenced three weeks since; she has never suckled on the right side, in consequence of retraction of the nipple; she most obstinately refuses to allow the abscess to be opened. To take mistura magnes. $\bar{c}$ magnes. sulpht. freely, and apply ungt. hydgr. F. inside a thin poultice, and take at night pulv. Doveri gr. x.

30th.—On the right side, the abscess has burst,

* "Principles of Surgery." 3rd edition. 1842.

and a circular patch on the skin, larger than a shilling, has been removed by ulceration; all redness and inflammatory action has disappeared; the abscess on the left side has also opened spontaneously, but there is a second suppurating spot below it; her pulse is very weak, soft, and rapid; tongue large, moist, and white. The mistura quinæ disulphat. was ordered with a tablespoonful of wine every four hours; the bowels directed to be kept relaxed with the purgative mixture; after the opening of the second abscess, which occurred in two days, the patient made a rapid recovery.

Case W.—April 16, 1852. ——, æt. 30; has swelling around the outer side of the nipple of the right breast; the skin is red and shining, and an abscess exists beneath; she has her fourth child, which is three months old, which, however, she suckled but one month, on account of sore nipples; a fortnight since, the breast began to grow hard and lumpy, and was accordingly rubbed with some popular liniment; the following week inflammation set in.

The inflammation of the skin does not seem to have reached a very intense pitch: the patient is anæmic and badly nourished; a small incision made into abscess; quinine mixture and beer ordered.

On the 23rd, the opening made by the bistoury is quite healed, *leaving only a longitudinal depression*, beyond a slight hardening in that part of the gland which was inflamed there are no further remains of the disorder; the breast to be compressed by strapping.

After a few days the patient was discharged cured.

Immediately the irritation accompanying the formation of the abscess has subsided, relief having been given to the state of tension by incision, and free evacuation of pus stimulated by a few hours of warm poulticing, we must endeavour to get rid of the effused lymph in the tissues around the abscess.

Mercurial ointment with resin cerate, or the mercurial plaister with ammoniacum, are very useful agents for this purpose. The simple application of resin cerate proves often sufficiently stimulating.

The ointment, whichever it may be, should be spread upon a piece of soft linen, of sufficient size to cover the whole of the inflamed region; an aperture should be made to correspond with the orifice of the abscess, and over the whole may be placed a *thin cold* poultice, to serve as a pad upon which the breast may imbed itself.

Compression of the gland, by strapping with adhesive plaster, is an effective means for promoting absorption when the irritability is not great, individual cases varying much in this respect. The straps should pass from the upper part of the sternum, by the lower border of the gland, to the side of the chest, pressing the gland upwards, and others should skirt the upper margin and be fixed to the same part of the side..

The state of the patient's system at this stage very seldom contra-indicates tonic medicines, and good diet. While the circulation is depressed and the patient badly nourished, either from the febrile state into which she has been thrown, or from other circumstances, we can hardly expect rapid absorption of the effused lymph; and upon this, as before hinted, depends the rapidity with which a return to the sound state is gained.

The ordinary dose of disulphate of quinine and dilute sulphuric acid, in some bitter infusion, serves to give appetite and check the discharge of pus; but it often occurs that the prostrated vital powers demand a more stimulating tonic, as ammonia and decoction of cinchona.

Inflammatory action terminating in the sloughing of considerable masses of the mammary tissue indicates an extraordinary depression of the vital powers, either from simple weakness or from the circulation of some poison in the blood. In the former case, additional attention must be paid to the support and nursing of the patient; in the latter, medicine must indicate the course to be pursued, according to the circumstances of the case. I once saw a most severe case of this result of inflammation occur in a young woman suffering under renal dropsy. Both breasts were enormously swelled, and from gaping ulcerations in the integument, large tongues of dead tissue protruded.

By the absorption of the wall of a neighbouring milk tube, or by abscess occurring in and about a duct in consequence of its over distention, an escape of milk occasionally takes place, constituting what is called mammary fistula. The external opening is prevented from closing—a few fungous granulations springing up around its margin, long after all traces of inflammatory action have disappeared, from the continuous passage of



the secretion. This is a matter that need give but little concern, as cessation of lactation brings its cure, if a slight stimulation of the orifice and tonics do not succeed.

The formation of deep sinuses—a much more annoying and obstinate sequela of mammary abscess, but, fortunately, of comparatively rare occurrence, in most cases—appears to depend upon that state of the constitution which is recognised by the name of a *scrofulous diathesis;* but at the same time it must be stated that the long continued use of large hot poultices and neglect induce it, by favouring great infiltration of the gland, and allowing to be established a chronic state of inflammation through the debilitated condition of the patient. It appears from the perusal of what has been written upon the treatment of this difficulty, that authors have not yet determined what is the best treatment. The extensive incisions recommended by Hey have, since his time, been almost universally disapproved of by subsequent writers.

Astringent injections, and compression with bandages or strapping, or simply compression, are to be persevered with; but from the appropriate medical and hygienic treatment of the

general system, a satisfactory termination is to be more confidently anticipated.

Retraction of the nipple following an attack of inflammation is no doubt due to condensation of the tissues immediately beneath it. This is a most mischievous consequence, as it places the breast *hors de combat* on future occasions.

It would appear that this has been generally caused by a state of chronic induration being allowed to remain long after the attack of inflammation. Gentle tension on the nipple should be perseveringly practised, provided no thickness or tenderness exists. (See Case K., p. 16.)

Case X. ——, æt. 32; applied Nov. 25th, 1851, with her first child, ten weeks old; began to perceive lumps in the breast, two weeks since in the left breast; there has been pain only during one week; she has had no shivering or other signs of febrile disturbance; she has never suckled with the right, in consequence of a sunken nipple.

In the treatment of cases of the second period—that is, when the abnormal state of the general system has rendered functional activity incompatible with vascular equilibrium,—we must proceed upon a somewhat different tack. We have much less to guard against in respect of secre-

tional distention. The asthenic condition of the system demands the first attention. We must remember that the pain, which always in these cases is most piteously complained of, is magnified by the low and irritable state of the nervous system, demanding effective doses of hyoscyamus, conium, or, better than either, opium.

The child must be immediately withdrawn from the breast, and perfect rest in the horizontal position enjoined. Tonics and a stimulating nutritious diet may be at once given; should suppuration be not imminent, compression by the bandage, or by strapping, *at once* resorted to, particularly when the breast is much enlarged or doughy, as has been described to be one of the most common conditions at this period.

Abscess of the mamma in unmarried females is ordinarily circumscribed and superficial. Three cases that have fallen under my notice during the last twelve months were almost subcutaneous; the patients were between sixteen and seventeen years of age, in whom the menstrual function had not been perfectly established. When application is made for assistance sufficiently early, the symptoms being acute, liberal employment of leeches may be safely made, but especial attention must be directed to the general health.

Abscess of the submammary cellular tissue is related to inflammation of the breast by accident of position. The tumour thus apparently produced in the breast, may be suspected to be of a different nature, and is most frequently mistaken for some other disease, and on this account the possibility of its occurrence must not be forgotten in the formation of a diagnosis in doubtful cases.

I have lately seen a case of a deep narrow sinus in a virgin breast, which apparently had been caused by the exit of pus from an abscess placed below the gland; and appended are the notes of the case.

Frances W., æt. 17, maid servant; admitted Dec. 19, 1851, into St. Mary's Hospital, Victoria ward, under the care of Mr. Ure; the right breast is swollen and tender; there is a small opening midway between the nipple and border of the gland on the outer side, which gives exit to a small quantity of discharge. About five weeks back she had swelling of the face, a week since the face recovered its natural appearance, but shoulder and arm were attacked after the same manner. The swelling gradually spread to the breast, accompanied with darting pains, sickness, and shivering. The patient states that

she had been to another hospital, where her breast was bandaged, after which she was discharged. However, the pain and swelling went on increasing till yesterday, when the abscess burst, and she entered St. Mary's.

She has missed her two last catamenial periods; her bowels are irregular, and she has been badly fed and over-worked.

22nd.—Mr. Ure examined the opening with the probe, and found a deep sinus extending apparently under the breast, a considerable distance up, and towards the arm. This he dilated by means of a long narrow probe-pointed bistoury, and ordered a poultice.

Jan. 2nd, 1852.—A solution of sulphate of zinc was ordered to be injected into the sinus, (S. Z. gr. iij., Aq. ʒi).

On the 13th, as the sinus still showed no disposition to heal, Mr. Ure laid it thoroughly open; there was considerable hæmorrhage, which required the ligature of some small vessels.

26th.—Going on well.

28th.—A lotion of nitrate of silver (N. A. gr. iij. in Aq. ʒi.) to be applied to what remains of the wound unhealed.

30th.—The patient was discharged—*cured*.

The peculiar resiliency of the gland renders the early recognition of an abscess placed beneath it a matter of considerable difficulty, and the obscurity as to where the pus will spontaneously attempt to escape by no means simplifies the cases. It is fortunate when the abscess forms near the circumference of the gland, so that the matter may escape from beneath its edge, rather than perforate its substance, in which case a sinus, troublesome to heal, generally remains.

I have thus endeavoured to show that the individuality of each case has to be minutely studied. This study of minute particulars leads to success in treatment, by affording rational grounds for the modification of therapeutic measures. In administering brandy to a person who has fainted, it is well to see that there is no chance of its running into the windpipe: so, with almost any of the remedies proposed for the treatment of inflammation of the breast. Compression, no doubt, accelerates absorption, and hastens thereby the cure; but such a result is not to be obtained unless the proper moment for its adoption be chosen. At a particular stage of suppuration, nothing is better than poulticing; but this, long continued, produces

harm greater in extent than the benefit at first derived.

It has been stated, that in certain diseases, the success attending opposite extremes of treatment proves about equal,—a circumstance to be explained by supposing that a particular remedy having been found useful in certain cases, and an opposite remedy having been found useful in certain other cases, that each has been indiscriminately applied. The same average of cases having been met with to which the treatment was unsuited, an equal number of reverses had to be set down to either remedy; whereas, had a judicious selection been made, the total result would have been more favourable.

A certain degree of prominence has been given to the consideration of the effects of over-lactation on the system of the mother. So repeatedly have injurious results to the child, from the same error, fallen under my notice, that I cannot conclude this Essay without expressing my sense of the importance of a proper recognition of it as a cause of disease in children, and my conviction that researches into this field of investigation would amply reward the labourer.

THE END.

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